(No Model.) 4 Sheets—Sheet 1.

R. RAMSAY.

APPARATUS FOR DISTRIBUTING COAL IN CARS.

No. 344,595. Patented June 29, 1886.

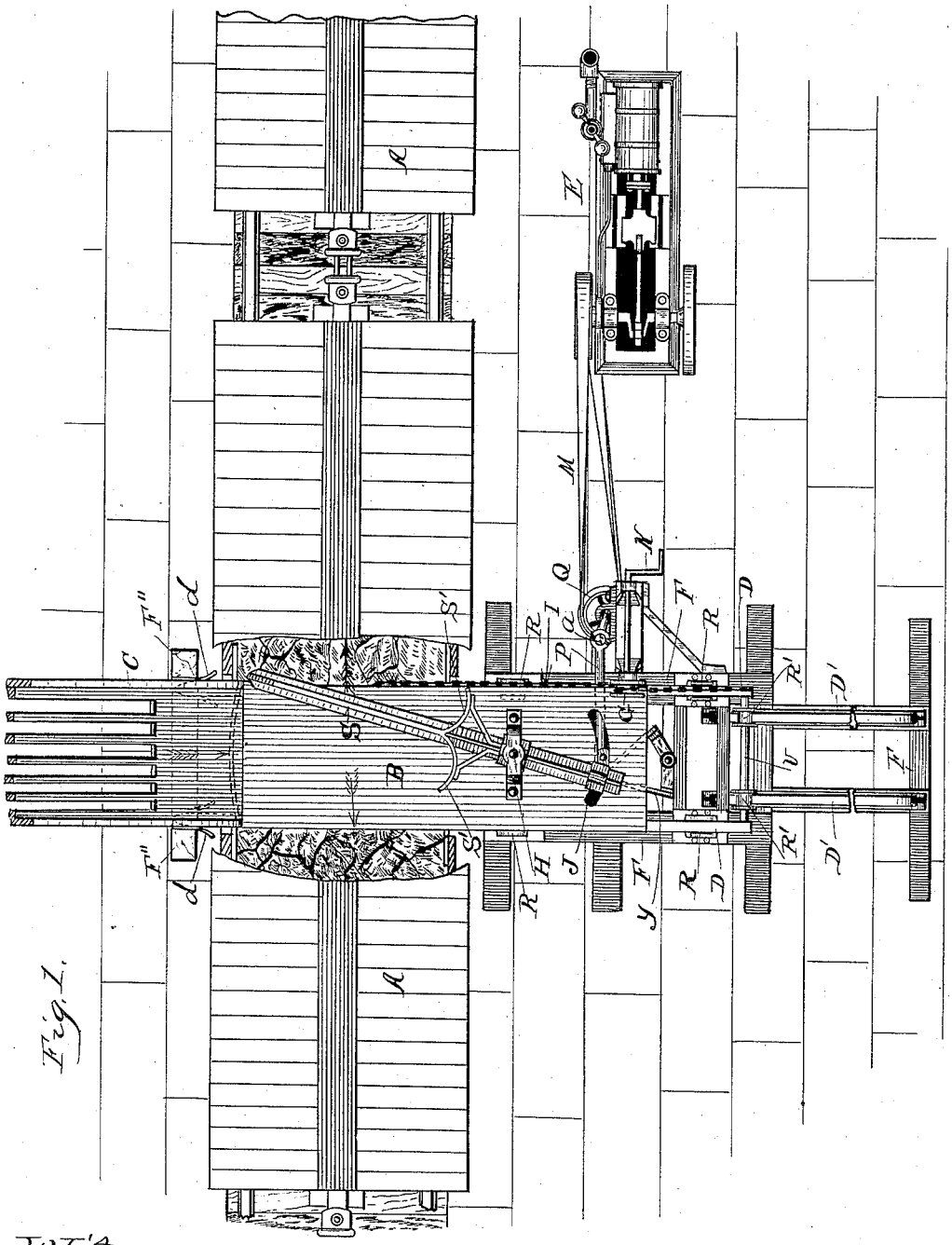

Fig. 1.

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Inventor,
Richard Ramsay.

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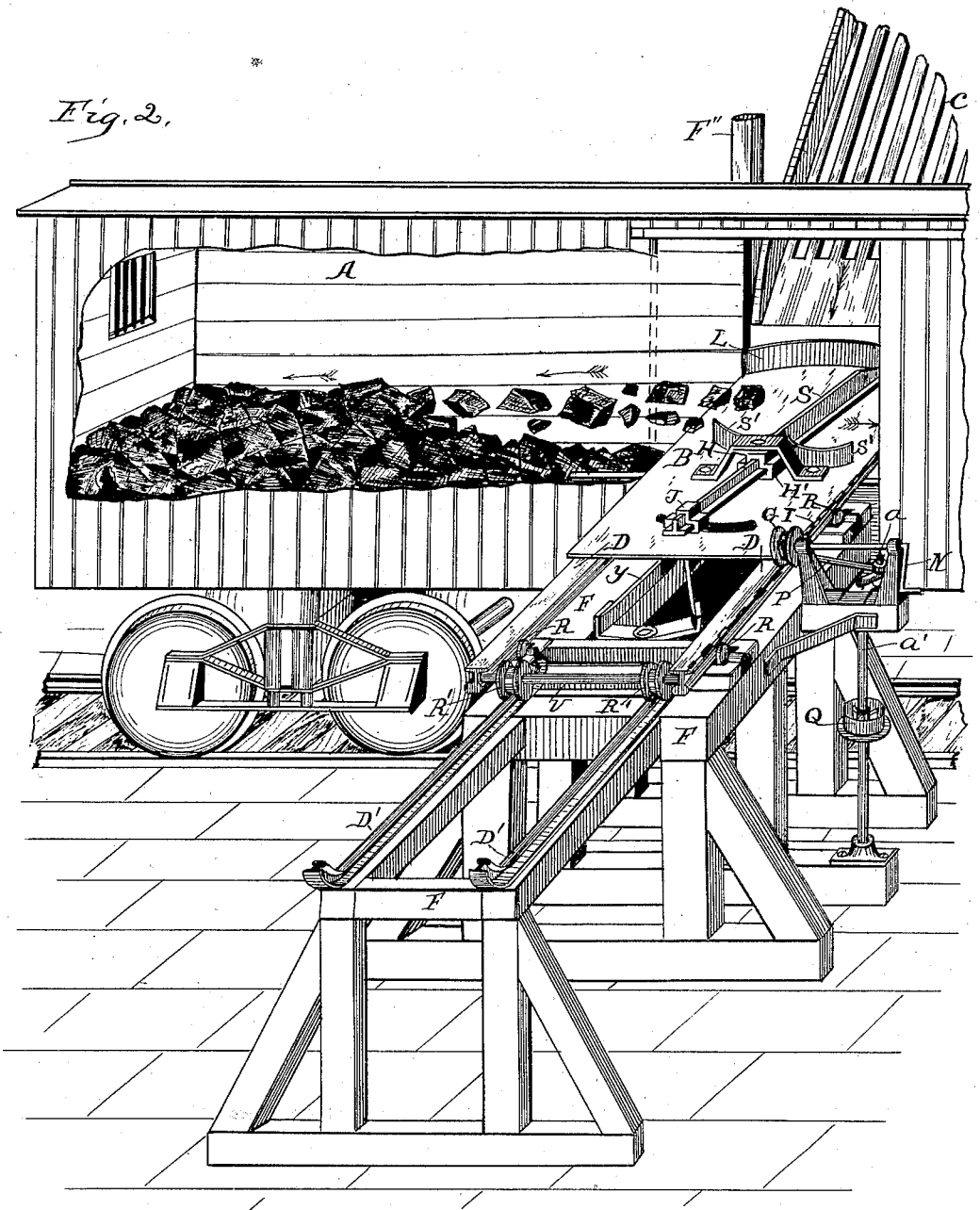
Fig. 2.



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(No Model.) 4 Sheets—Sheet 3.

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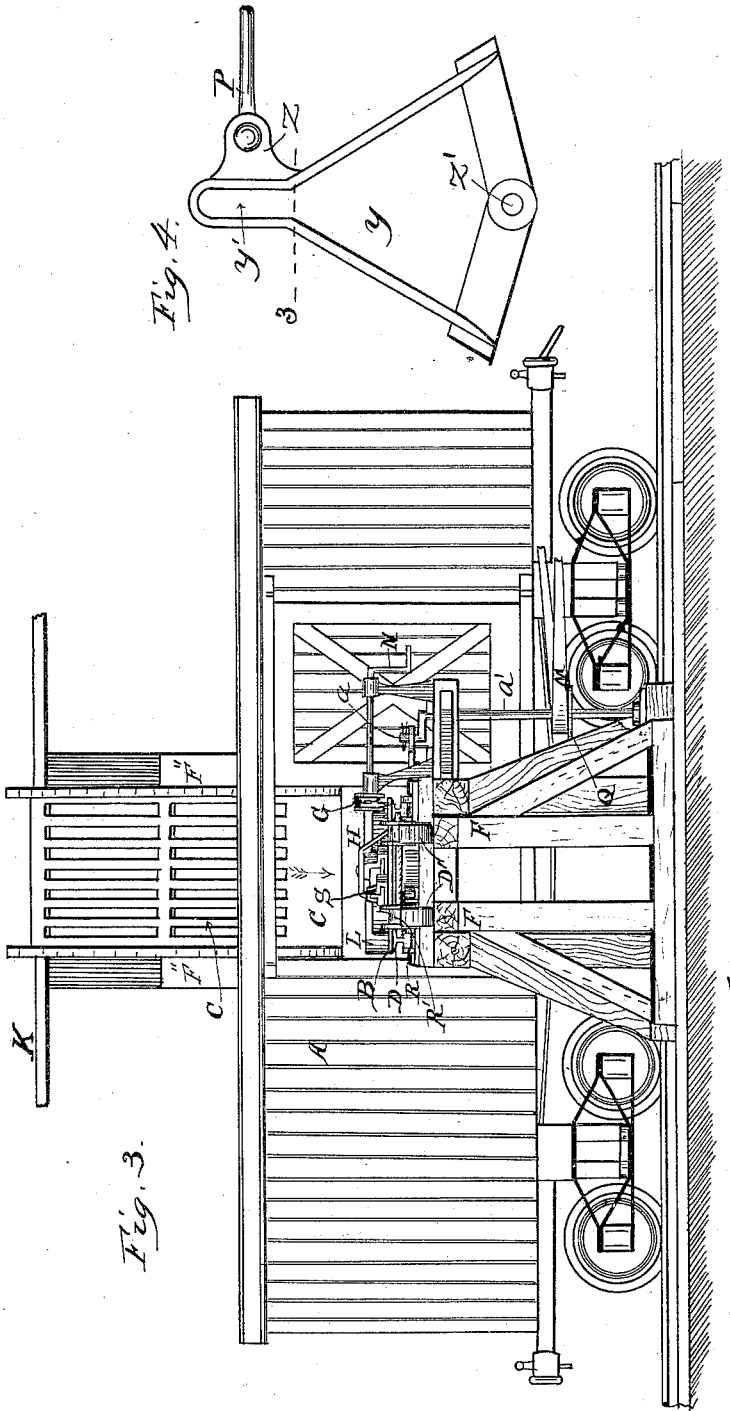

Fig. 3.

Fig. 4.

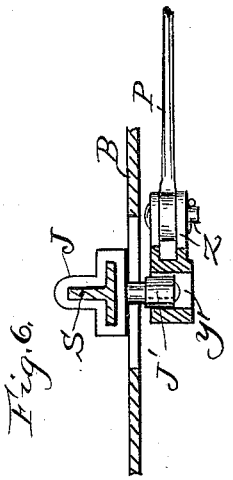

Fig. 6.

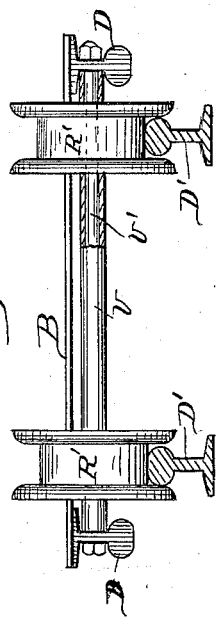

Fig. 5.

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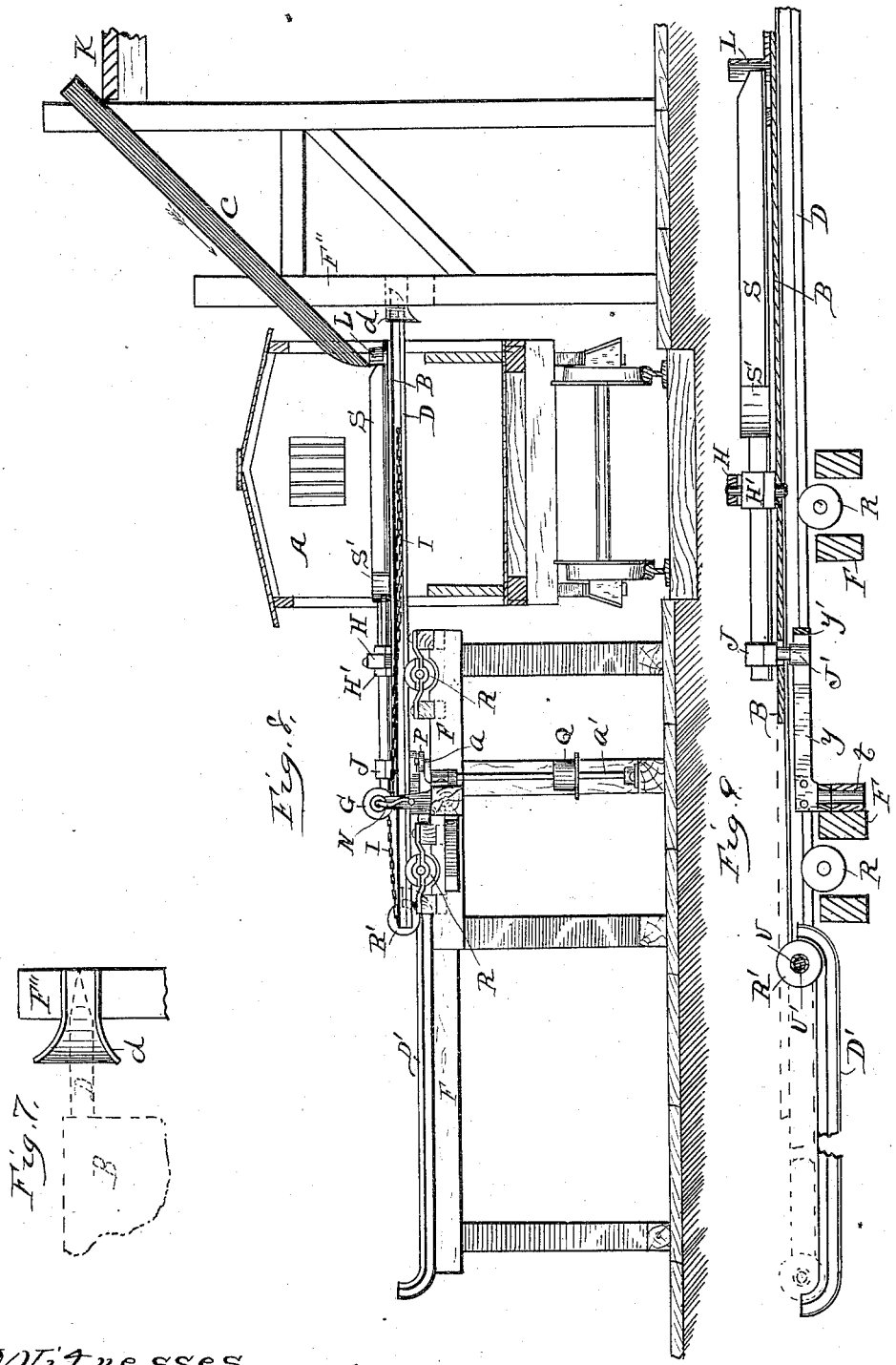

Fig. 7.

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UNITED STATES PATENT OFFICE.

RICHARD RAMSAY, OF BRACEVILLE, ILLINOIS.

APPARATUS FOR DISTRIBUTING COAL IN CARS.

SPECIFICATION forming part of Letters Patent No. 344,595, dated June 29, 1886.

Application filed February 18, 1886. Serial No. 192,381. (No model.)

To all whom it may concern:

Be it known that I, RICHARD RAMSAY, a citizen of the United States of America, residing at Braceville, in the county of Grundy and State of Illinois, have invented certain new and useful Improvements in an Apparatus for Distributing Coal in Cars, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain improvements in an apparatus for distributing coal in box-cars as the coal enters the cars from the chute at a coal-shaft, where cars are loaded, the construction and operation of which are fully set forth and explained in the following specification and claims, reference being had to the accompanying drawings and the letters and figures thereon, which form a part of this specification, in which—

Figure 1 is a plan view on the top of the distributer and coal-chute and of a box-car having a portion of the roof broken away to show the distributer as it would appear ready for operation. Fig. 2 is a perspective view of the distributer as it would appear in operation in a box-car, a portion of the side of the car being broken away to show the manner in which coal is distributed by the distributer. Fig. 3 is an end elevation of the distributer and its supporting-frame, and a side view of a box-car. Fig. 4 is a plan view of the oscillating triangular frame of the distributer, which imparts motion to the vibrating sweep. Fig. 5 is a side view of the rear truck for supporting, guiding, and holding in place the rear end of the distributer-carriage. Fig. 6 is a cross-sectional view of the sweep of the distributer at one side of its wrist-roller, and a cross-sectional view of the vibrating triangular frame on line 3 of Fig. 4. Fig. 7 is a top plan view of one of the flared pockets and a portion of its supporting-frame for supporting and properly holding the extended end of the distributer-carriage when in a car. Fig. 8 is a side view of the distributer and its supporting-frame, and a vertical cross-sectional view of a box-car, and a side view of the coal-chute, showing the distributer as it would appear in the car ready for operation; and Fig. 9 is a vertical longitudinal section of the distributer-carriage and a portion of its supporting-frame at one side of its vibrating sweep, and a side view of one of the rear track-rails of the distributer.

Referring to the drawings, A represents a box-car.

F is the frame of the distributer, made from heavy timbers and located at one side of the car-track at a coal-shaft.

F″ is the chute-frame; K, the elevated platform upon which the coal-mining cars are run; and C is a coal-chute, arranged in frame F″ on the opposite side of the car-track from frame F in such manner as to conduct coal properly into the box-cars.

Upon the front part of frame F, and at each side thereof, are properly boxed two grooved wheels, R R, for supporting a reciprocating carriage, and upon the rear part of said frame are secured a pair of parallel track-rails, D′ D′, having their ends turned up for the purpose of arresting the movement of the traveling wheels of the reciprocating carriage which roll thereon, thereby preventing the carriage from running off its supporting frame. The said reciprocating carriage consists of a metal plate or platform, B, secured to a pair of side rails, D D, formed in this instance from ordinary railroad-rails inverted so their treads will rest and travel in the grooves of said wheels R. The said side rails, D D, extend rearwardly from said platform, and are supported at their outer end by the axle V′ of the grooved wheels R′ R′, which roll on said tracks D′ D′. The axle of said wheels consists of a rod passing through the side rails, D D, of the carriage and through said wheels loosely, and the wheels held the proper distance apart and from said side rails by means of the tubes V, sleeved on said axle, as shown in Fig. 5. The opposite end of said side rails, D D, project in advance of the front end of the platform B, so as to enter the pockets *d d* of the chute-frame F″, as shown in Fig. 8, to hold that end of the carriage in place while the apparatus is in operation.

The carriage is reciprocated by means of turning the crank N, the shaft of which is provided on its opposite end with the flanged wheel G, located above one side of the carriage, and around which the chain I passes, while its ends are secured, one at or near each end of the carriage.

The upper face of the carriage-platform B

is provided with a vibrating sweep, S, pivotally secured thereto, as shown particularly in Figs. 1, 2, 8, and 9, at a point about one-third its length from its rear end, by means of the stud-box H', which is sleeved on said sweep S, and secured thereon by rivets or other means, and boxed in platform B and standard H thereof. This sweep is intended to be made of T-iron, as shown, for strength. The rear short end of said sweep S is provided with a similar stud-box, J, having a roller-wrist, J', projecting downward through a segmental slot in said platform, as shown in Figs. 1, 2, and 9, and in the roller-box *y'* of triangular frame *y*, which frame pivots at its rear wide end to a cross-beam of frame F by means of its box *Z'*, as shown in Fig. 1. (See also Fig. 4.) The said vibrating frame *y* is provided with a pair of ear-lugs, Z, at the side of its roller-box, as shown in Fig. 4, between which pitman P is pivotally secured. The opposite end of said pitman is boxed on crank *a* on the upper end of the vertical shaft *a'*, properly boxed at the side of frame F. This shaft has secured thereon the belt-pulley Q, which connects with the drive-belt pulley of a stationary engine, E, by means of a belt, *m*.

It is intended that the engine shall run continuously, to continuously operate the triangular frame *y*. The form of the said frame *y* is such that when the carriage is moved backward to the rear end of frame F the diverging sides of said triangular frame will permit the roller-wrist of the sweep S to move out of its roller-box in said frame and be disengaged from said frame, so as not to operate the sweep when the carriage is thus moved backward. When the carriage moves forward to be in the car, the converging sides of said triangular frame will conduct the roller-wrist J' into its box *y'* of said frame, and vibratory motion is thus imparted to the sweep S, so its front end will rapidly sweep the upper surface of platform B from side to side.

In Figs. 1, 2, and 8 the carriage is shown as run in the side door of the car across the car, so its outer end will be under the chute C, which enters the opposite car-door, and its extending side rails, D D, entered into the pockets *d d* of the chute-frame F'', to hold that end of the carriage firmly in place while the apparatus operates.

The operation of the said apparatus is substantially as follows: The carriage is supposed in the first instance to be at the rear end of its supporting-frame F on the tracks D' D' and wheels R R, as shown by dotted lines in Fig. 9. A box-car is then moved to stand between said carriage and the coal-chute. The carriage is then run forward on the wheels R into the car, as shown, by means of turning the crank N, and reach across the car and extend under the coal-chute, which is placed in the opposite door of the car, and so its extending side rails, D, will enter the pockets *d d* of the chute-frame F'', as shown in Figs. 1 and 8. When the said carriage is thus run forward into the car, the wrist-roller J' enters between the converging sides of the triangular frame Y, which continually operates by reason of its connection with said engine, and the forward end of the sweep S is then caused to vibrate horizontally and rapidly on the platform of said carriage, and as the coal falls from said chute on said platform it is thrown by said sweep each way into the car and evenly distributed throughout the car, as shown particularly in Figs. 1 and 2. The sweep S is intended to be vibrated at sufficient speed, so that no great amount of coal will be accumulated on the platform of the carriage until it is thus removed, thereby rendering it more easy to distribute the coal, as stated.

The wings S' on the sweep and the flange L on the front end of the carriage prevent the coal from being thrown against the sides of the car to injure it needlessly and prevent clogging of the coal.

The carriage is run into the car at sufficient height to be above the grain-doors commonly used in a car, as shown in Fig. 8, so that a full load of coal may be loaded and distributed in the car.

When a car is filled, the chute and carriage are withdrawn from the car, and the loaded car removed and an empty one substituted, to be filled in like manner. When the said carriage is run back out of the car, the roller-wrist J' moves back out from between the side arms of the triangular frame *y* and disengages from it, so that the sweep S only vibrates while in the car, although the engine and triangular frame *y* operate continuously.

By the use of this device a car is loaded with coal as quickly as the chute will deliver it, and obviates the necessity of shoveling it to distribute it over the floor of the car.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows, to wit:

1. In combination with the platform B of the carriage, the sweep S, pivotally secured thereto and arranged to be vibrated horizontally upon said carriage, substantially as and for the purpose set forth.

2. In combination with frame F, the reciprocating carriage consisting of the platform B, side rails, D D, and traveling wheels R' R', suitably supported upon said frame, and having pivotally secured thereon the sweep S, and the triangular frame *y*, adapted to have continuous movement and arranged to become engaged or disengaged from said sweep while in motion, substantially as and for the purpose set forth.

3. In combination with the reciprocating carriage described and the frame F, the grooved wheels R and track-rails D', and the flanged wheel G, chain I, and crank N, substantially as and for the purpose set forth.

4. In combination with the frames F and F'' and coal-chute C, the reciprocating carriage and vibrating sweep, constructed substantially as and for the purpose set forth.

5. In the apparatus shown and described for distributing coal in cars, and in combination with the extending ends of the side rails, D D, of the carriage supporting the vibrating sweep S, the flared pockets *d d*, as and for the purpose set forth.

6. In the coal-distributing apparatus shown and described, the sweep S, having the side wings, S′, and boxes H′ and J, substantially as and for the purpose set forth.

7. In combination with frame F, the triangular frame *y*, and pitman P, the crank-shaft *a′*, having fixed thereon the belt-pulley Q, and the belt M, for imparting motion to said parts, substantially as and for the purpose set forth.

8. In the coal-distributing apparatus shown and described, the triangular frame *y*, having the open roller-box *y′*, ear-lugs Z, and box Z′, in combination with frame F, pitman P, crank-shaft *a′*, and sweep S, substantially as and for the purpose set forth.

9. The combination, with the frame F, of the grooved wheels R, track-rails D′ D′, having upturned ends, the reciprocating carriage consisting of the platform B, side rails, D D, and traveling wheels R′ R′, the sweep S, triangular frame *y*, pitman P, crank-shaft *a′*, and pulley Q, constructed and arranged to operate substantially as and for the purpose set forth.

10. In an apparatus for distributing coal in box-cars, a vibrating sweep arranged to be run into a car in such manner as to engage with and scatter coal as it enters the car from the chute, in the manner substantially as specified.

11. In the coal-distributing apparatus shown and described, and in combination with the platform B of the carriage and the sweep S, the flange L, substantially as and for the purpose set forth.

12. The reciprocating carriage consisting of the platform B, side parallel rails, D D, shaft V′, and traveling wheels R′ R′, in combination with the frame F, grooved rolls R, and track-rails D′ D′, said carriage being arranged to support the sweep S on its upper surface, in the manner substantially as set forth.

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Witnesses:

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